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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,819	10/31/2003	James B. Skov	013628.00519 (02CXT0049C)	9523

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JACKSON WALKER (CONEXANT)
901 MAIN STREET, SUITE 6000
DALLAS, TX 75202

EXAMINER	
JAMAL, ALEXANDER	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
01/07/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,819	SKOV ET AL.	
	Examiner	Art Unit	
	ALEXANDER JAMAL	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment and arguments, the examiner withdraws the previous set of rejections and submits a new set on non-final rejections based on new prior art.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-7** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites an AC signal that is modulated, then a load is modulated when said AC signal is not modulated. The claim makes no sense ! If the AC signal is modulated then the 'load modulating' step will never happen. Additionally it is not clear how exactly the 'load' is modulated. For the purpose of examination the examiner assumes the claimed system functions bi-directionally and can modulate/demodulate data in either direction based on the detection of incoming data.

Correction/Clarification is requested.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1- rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (6351530), and further in view of Thomas (US 20040153543 A1).

As per **claims 1,8,** Rahamim discloses a system and method for sending digital clock signals across an isolation transformer combined with (modulating) a power signal (AC signal). The system uses a transmit and receive comparator to transmit/receive (extract) the bidirectional data across a separate transformer (comparators 400,402 in Fig. 5). However, Rahamim does not disclose a bidirectional data signaling protocol implemented where data signals are received bidirectionally across the same transformer as the AC power signal (modulating according to detected inbound data).

Thomas discloses a system where data is combined with (modulates) a power signal to form a bidirectional communications link (abstract). Thomas teaches that this allows the same set of lines to carry both power and data (para. 21). It would have been obvious to one of ordinary skill in the art at the time of this application to transfer both the modulated data and power over the same pair across the same transformer in order to eliminate the need for the data isolation transformer. The system can perform bidirectional data transmission (modulation/demodulation). The signals do not have to be

present simultaneously, ie the outgoing modulation may be present when the incoming modulation is not present and vice-verse. The 'load modulation' must be 'sensed' in order to perform the disclosed bidirectional communication. It would have been obvious to one of ordinary skill in the art at the time of this application to combine the data and power isolation interface in order to reduce part count.

As per **claim 2,9,15,** Thomas discloses that any known modulation means may be used by the system, but does not specify the specific type.

It would have been obvious to one skilled in the art that any well known modulating scheme (such as frequency, amplitude, or phase) could be used in order to perform the disclosed modulating step as a matter of design choice). All modulating schemes are derived from a clocked bitstream of data to be transmitted. Further the examiner contends that any well known logic devices such as exclusive OR and NOR gates could be used as a matter of design choice in order to set the clocking rate for the modulating/demodulating processes.

As per **claim 16,** the device inherently comprises a driver in order to drive the signals across the transformer.

As per **claim 17,** Rahamim discloses that the line impedance (impedance presented to the transformer) may be made programmable via received data (digital values) (Fig. 1, Col 4 lines 45-65). This inherently requires a switch-able impedance element across the transformer.

5. **Claims 3** rejected under 35 U.S.C. 103(a) as being unpatentable over Rahamim (6351530), and further in view of Thomas (US 20040153543 A1) and further in view of Sun (5056118).

As per **claims 3,10,18,** Rahamim and Thomas disclose power and data signals being transmitted across the same transformer, but does not disclose a clock signal embedded in the data signal.

Sun discloses a system to embed and recover clock signals from a data stream using a comparator (Fig. 1, Abstract). The clock signals are used to sample (recover) the data signals (abstract).

As per **claims 4,11,19,** the transitions are sensed with the comparator, and an independent clock is synchronized with a 'controllable oscillator' (Fig. 3, return to zero).

As per **claims 5,6,** any electrical signal present on the inputs to the transformer (such as an incoming clocked data signal or an outgoing analog signal) will vary the impedance presented to the transformer.

As per **claim 7,12,** Rahamim discloses that the line impedance (impedance presented to the transformer) may be made programmable via received data (digital values) (Fig. 1, Col 4 lines 45-65). This inherently requires a switch-able (analog gate) impedance element across the transformer.

As per **claims 13,14,20,** it is rejected as per claim 12 rejection. The system inherently comprises A/D and D/A converters for the purpose of sending and receiving the data/power.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

January 7, 2009